

Compliance, Science, and Research

Archeology in the Mariana Islands

The Department of the Navy has jurisdiction over approximately 17,200 hectares (43,000 acres) of land in the Mariana Islands, in the Territory of Guam, and the Commonwealth of the Northern Mariana Islands (CNMI) on the island of Tinian.

An important part of the Navy's mission is to protect the environment including cultural resources. Sections 106 and 110 of the National Historic Preservation Act (NHPA) of 1966, as amended, and Navy policy* provide for agencies to allocate funds in support of compliance efforts to identify, evaluate, inventory, and protect resources that are listed or eligible for listing on the National Register of Historic Places (NRHP). The Navy is committed to operating in a manner compatible with the environment and incorporates preservation considerations into its daily management of cultural resources and stewardship activities. Navy installations and training areas in the Pacific become islands of safety for cultural resources.

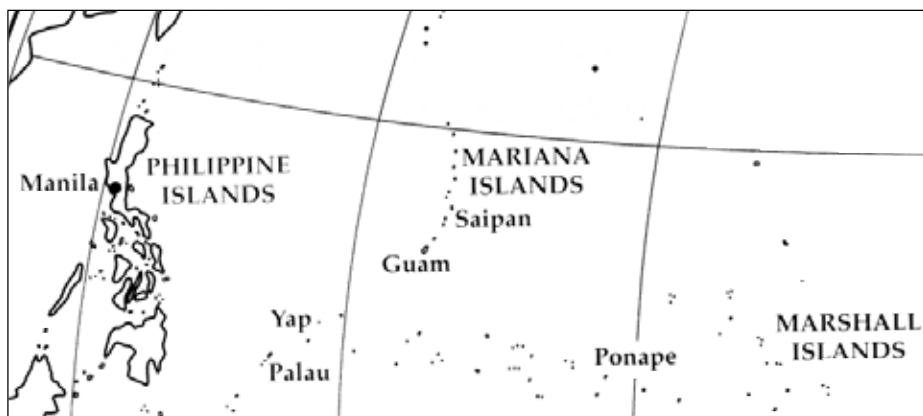
Lands under the jurisdiction of Commander, Naval Forces Marianas (COMNAVMARIANAS) hold thousands of cultural resources. Archeological remains record 3,500 years of occupation, with the prehistoric era beginning approximately 1500 B.C. and lasting until after European contact in A.D. 1521. Remains of Chamorro culture display unique

early pottery traditions and the later development of the megalithic Latte architecture. Historic structures from the Spanish occupation, American colonization in the Territory of Guam, and Japanese colonization in the CNMI dot the landscape. World War II sites hidden in the thick jungle testify to the fierce battle for the Marianas.

Restricted use in large tracts of diverse land, such as the 3,536.8-hectare (8,842-acre) area in central Guam known as the Ordnance Annex, protects the archeological record from vandalism and development. Remains are thus preserved to record and study occupational systems such as caves; subsurface deposits containing materials vital for obtaining radiocarbon data to study temporal issues; and macro- and microconstituent data to address subsistence issues.

Professional efforts to identify, evaluate, and protect cultural resources demand that the laws, ethics, standards, methods, techniques, and theories that guide good science and research are properly applied to compliance projects. Projects conducted in support of compliance efforts develop research goals pertinent to the understanding of human subsistence and settlement for each project area, and the region. Field strategies are developed to determine data requirements and to guide data collection, analysis, and interpretation. Laboratory investigations such as paleoenvironmental studies, lithic analysis, and residue analysis contribute to our understanding of the archeological record.

Analysis results provide COMNAVMARIANAS land and resource managers with data to evaluate cultural resources under their purview and develop appropriate management strategies, while simultaneously providing scientists with comprehensive explanations and material for inquiry to continue furthering our understanding of Mariana Islands prehistory.



A winch is used to extract a drive segment of the Laguas core. Photo courtesy Department of the Navy Pacific Division, Naval Facilities Engineering Command, Pearl Harbor, Hawaii, by International Archaeological Research Institute, Inc. Honolulu, Hawaii.



Paleoenvironmental studies conducted in conjunction with archeological survey in Guam's southwestern Piti District near Apra Harbor, sponsored by CONINAVMARIANAS in compliance with Section 110, provide supporting data for evaluating and interpreting cultural resources. A 28-meter sediment core collected from a wetland near the Laguas drainage produced microfossils of pollen, phytoliths, diatoms, and charcoal particles. These data were applied to investigations concerning island environment prior to human colonization, impacts on the environment subsequent to human colonization and land use, climate changes, native plant introductions, and agriculture.

Other paleoenvironmental samples were collected from the Fonte wetlands and savanna grasslands in conjunction with a Section 110 survey at Nimitz Hill, Guam. These data add to a stimulating scientific debate concerning the development of grasslands on Guam and other Pacific islands. Did the grasslands result from past agricultural practices, or did their existence restrict past agricultural practices? Clearly, to interpret archeological sites and manage them wisely, the relationship to past environmental conditions is essential.

The Nimitz Hill survey also located the largest lithic quarry found to date in the Mariana Islands, now known as Chert Hill. Specialized lithic studies provided data supporting a hypothesis that the upper slopes of the Fonte drainage system were used for prehistoric farming. The stone cores showed little preparation prior to flake removal and the tools produced were simple,

suggesting the quarry provided a convenient and expedient chert resource for on-the-spot tool making. This information is now integrated into the regional database, providing material for comparison studies as archeologists investigate the distribution of Chert Hill material at other sites as part of the process of understanding our cultural resources.

Pottery sherds are ubiquitous in the Mariana Islands archeological record, providing researchers myriad venues for investigating temporal and subsistence issues. Four sherds collected during the Section 110 Nimitz Hill Survey yielded charred deposits from the interior surfaces suitable for residue analysis. Starch grains of *Colocasia esculenta* (taro) were identified on each of the four sherds and phytoliths diagnostic of rice were seen on one sherd. This is the first instance this kind of analysis has been applied to Mariana Islands pottery. It produced the first hard data enabling development of a hypothesis that pots with wiped/brushed, plain, or faintly combed exterior surface treatments were used for cooking. These approaches have been proven a viable avenue of study to address issues of food preparation and pottery function critical to understanding Mariana Islands prehistory.

The results also bolster existing data strongly suggesting that rice was a prehistoric crop, a topic of interest to Mariana Islands archeology for some time. Rice grain impressions have been identified in a few pottery sherds. Work supported by COMNAV MARIANAS compliance actions contributes to the body of scientific data to address specific and general research issues.

A regional Integrated Cultural Resource Management Plan (ICRMP) presently in preparation will synthesize the data collected by Navy projects, create a geographic information system data base, and develop or restructure regional research questions with suggestions for future investigations. The regional ICRMP will provide guidance for COMNAV MARIANAS continued responsible stewardship and direction for future studies.

Note

* *Environmental and Natural Resources Program Manual*, Chapter 23, Department of the Navy Office of the Chief of Naval Operations Washington, DC. (OPNAVINST 5090.1 B CH-2).

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